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CLAIM SUMMARY DOCUMENT:

1. (Currently amended) A hybrid synchronous motor with a toroidal winding comprising:

a rotor and a stator,

the stator having at least one assembly of coaxially displaced ferromagnetic rings, the rings having ferromagnetic cogs both on inner and outer circumferences thereof, and

the assembly being provided with a polyphase toroidal coil made of coil segments so that a coil wire is lying between the cogs;

wherein the number of cogs formed on the inner circumference of the stator rings is the same as that of the number of cogs formed on the outer circumference thereof.

2. (Previously Amended) The hybrid synchronous motor according to claim 1, further comprising a plurality of the stator assemblies and wherein the toroidal coil is formed around all of stator assemblies simultaneously, and wherein the common toroidal coil is wound around or assembled from U-shaped copper parts.

3. (Currently amended) ~~A~~ The hybrid synchronous motor ~~according to claim 1,~~ with a toroidal winding comprising:

a rotor and a stator.

the stator having at least one assembly of coaxially displaced ferromagnetic rings, the rings having ferromagnetic cogs both on inner and outer circumferences thereof, and

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the assembly being provided with a polyphase toroidal coil made of coil segments so that a coil wire is lying between the cogs.

wherein the rotor includes one pair of inner and outer rotor assemblies that is mounted to each stator assembly, each rotor assembly including two coaxially displaced rotor rings, each rotor ring being formed with rotor poles in the form of cogs which are equally spaced along a circumferential direction, so that the poles of each of the rotor rings are angularly shifted for one half of a rotor pole division relative to the poles of the other corresponding one of the rotor rings, respectively.

4. (Previously Amended) The hybrid synchronous motor according to claim 3, wherein

either one axially magnetized disk is inserted between the cogged stator rings of each assembly, or two such disks are inserted between the adjacent cogged rotor rings, and wherein

the disk or the disks are producing transverse magnetic flux in the inner and in the outer air gaps between the rotor and stator.

5. (Previously Amended) The hybrid synchronous motor according to claim 3, wherein

four sets of rotor poles have the same number of poles, and four sets of stator poles also have the same number of poles, and the number of rotor poles differs from the number of stator poles if the stator poles are equally spaced along a circumferential direction.

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6. (Previously Amended) The hybrid synchronous motor according to claim 1,
wherein

the gaps between the rotor and the stator are filled with a liquid, which improves
heat transport from a motor interior and reduces mechanical vibrations.

7. (Original) The hybrid synchronous motor according to claim 6, wherein the
liquid is a ferromagnetic liquid.